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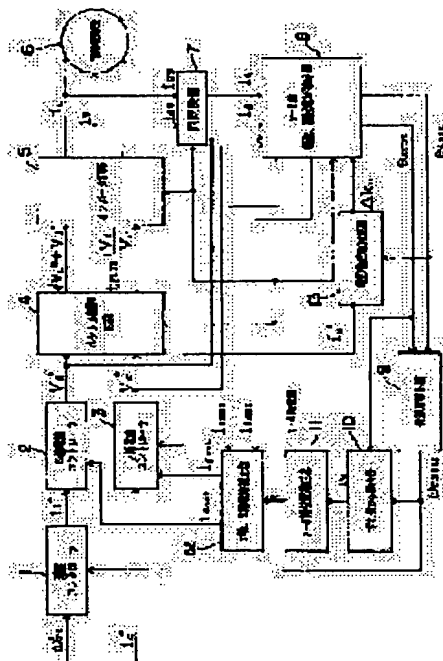
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## (54) IDENTIFICATION OF CONSTANT FOR SYNCHRONOUS MOTOR

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide with high accuracy a method for identifying the induced voltage constant and d-axis inductance of a synchronous motor rapidly.

**SOLUTION:** An  $\alpha$ - $\beta$  space coordinate system is set, where an  $\alpha$ -axis is the U-phase of a stator of a synchronous motor 6, and a  $\beta$ -axis is an axis formed by rotating the  $\alpha$  axis by an electrical angle  $90^\circ$  in the forward direction. In the  $\alpha$ - $\beta$  spatial coordinate system, there is supposed a d-q axis which is rotated at a synchronous motor with a rotating speed  $\omega_{rm}$ , where a d-axis is a true magnetic axis of the synchronous motor 6 and a q-axis is an axis advanced by  $90^\circ$  from the d-axis, and a  $\gamma$ - $\delta$  axis which is rotated at a command synchronous motor rotating speed  $\omega_{rm}^*$ , where a  $\gamma$ -axis is a specified magnetic axis of the synchronous motor 6 and a  $\delta$ -axis is an axis advanced by  $90^\circ$  from the  $\gamma$ -axis. Based on an induced voltage  $e_{\delta}$  of the synchronous motor generated by a  $\delta$ -axis current equation, where the inputs are the  $\gamma$ - $\delta$  axis current and the  $\delta$ -axis voltage command value  $V_{\delta}^*$  and the disturbance is the induced voltage of the synchronous motor, the induced voltage constant is regulated so that an estimated speed value  $\omega_{rmest}$  added with a correction value, so that an estimated speed value  $\omega_{rmest}'$  added with no correction value is equal for identifying the induced voltage constant.



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